

HAER No. WA-116-B

Puget Sound Naval Shipyard,
1000-Ton Forging Press
Central Industrial Area, Farragut Avenue
Bremerton
Kitsap County
Washington

HAER
WASH
18-BREM,
4B-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Western Region
Department of the Interior
San Francisco, California 94107

HISTORIC AMERICAN ENGINEERING RECORD
PUGET SOUND NAVAL SHIPYARD, 1000 TON FORGING PRESS

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Location: On Farragut Avenue; bounded on the west by State Highway No. 304 and Montgomery Avenue, on the north by First Street, Gregory Way, and Burrell Street, on the east by Pacific Avenue and Sinclair Inlet, on the south by Sinclair Inlet, Puget Sound Naval Shipyard, Kitsap County, Bremerton, Washington.

USGS Bremerton West (1:24,000); Universal Transverse Mercator Coordinates: Easting 528080 and Northing 5267520.

Date of Construction: 1943

Engineer: Unknown

Builder: Baldwin Southwark Division, The Baldwin Locomotive Works, Philadelphia, Pennsylvania.

Present Owner: U. S. Government, administered by the Department of Defense/U. S. Navy, Bremerton, Washington.

Present Use: 1000 Ton Gap Type Forging Press; hydraulic press used to bend, shape or straighten steel beams.

Significance: The 1000 Ton Forging Press became an essential element of World War II ship repair and building activity; representative of the shipbuilding and repair machinery installed in the central industrial area at the Puget Sound Naval Shipyard during the Second World War. The 1000 Ton Press was used to bend, shape and straighten steel beams in the fabrication and assembly of the structural components of ships. The Press was situated in the Shipfitter and Welder Shop (Building 460) where large steel plates and structures were formed to make elements of hull, superstructure and other structural components of ships.

Report Prepared By: David W. Harvey
Architectural Historian
1344 Hunt Avenue
Richland, Washington 99352

Date: February 1994

Historical Background

Puget Sound Naval Shipyard

The Puget Sound Naval Shipyard was founded in 1891, two years after the Naval Act of 1889 signaled a new departure in American naval policy through the construction of a seagoing battleship fleet. The fleet was instrumental in the acquisition and protection of America's overseas possessions. To build and repair naval ships the United States established bases and ship repair facilities overseas and domestically. One of the first on the West Coast was the Puget Sound Naval Shipyard in Bremerton, Washington.

From the outset the most important aspect of the Shipyard was its ship repair facilities, or industrial yard. The completion of Drydock No. 1 in 1896, and other subsequent ship repair facilities, was extremely important as it made the Shipyard the only one on the West Coast with the capacity to repair America's growing Pacific battleship fleet. As early as World War I the Shipyard possessed the major components required of a naval ship repair facility, including the fabrication and assembly of the structural components of ships.

By the mid-1930's the gathering of storm clouds over Europe and Asia saw an increase in funding for military preparedness and subsequent shipbuilding activity. One of President Franklin Roosevelt's first acts in office was the signing of Executive Order 6174 allocating \$238 million in National Recovery Administration funds for ship construction, which increased shipbuilding and repair activity at Puget Sound Naval Shipyard.

When Japan attacked Pearl Harbor the Puget Sound Naval Shipyard was only one of two naval yards on the West Coast which was fully operational. It was, in addition, the only battleship repair yard on the Pacific Coast. The Shipyard became the principal repair establishment for war-damaged battleships and air craft carriers as well as smaller warships of the Pacific fleet. (Five of the eight battleships bombed at Pearl Harbor were repaired at the Yard.)

Building 460

The drydocks and other ship repair facilities in Puget Sound Naval Shipyard are located on Farragut Avenue in the central industrial area (CIA). The onset of World War II increased activity in the CIA considerably, resulting in the construction of numerous shipbuilding and repair buildings in the Yard. Building 460, the Shipfitter and Welder Shop, was completed in 1941 (on Farragut Avenue), and was used as an assembly building. The United States entry into World War II, however, led to the completion in 1943 of a sizeable addition onto the north side of Building 460, converting the entire building into a shipfitter shop. Thus, Building 460 became an essential element of World War II ship repair and building activity at the Yard.

With the addition Building 460 accomodated

"the layout, equipment and assembly areas for ship building and repair activities. Large steel plates and structures were formed to make elements of hull, superstructure, and other structural components of the ships. The shipfitter shop ... handled fabrication and assembly of the structural components of the ship. It is this aspect of shipbuilding and repair that is probably most associated with the repair and construction efforts of World War II ... "(Grulich 1985).

The design of the facility reflects the evolving technologies of the 1940's. The north three-quarters of the

building fabricates plates for assembly in the large cross bay at the south end of the structure.

1000 Ton Forging Press

The main fabrication and assembly floor of Building 460 is still largely arranged and equipped as it was during World War II. Equipment dating from this period includes the Southwark hydraulic 1000 ton gap type forging press that is used in the fabrication and assembly process. The 1000 ton press was constructed by the Baldwin Southwark Division of the Baldwin Locomotive Works, Philadelphia, Pennsylvania. Specifically, the 1000 ton press was used to bend, shape and straighten steel beams in the fabrication and assembly of the structural components of ships.

The 1000 ton press is of the open gap type. It is equipped with its own power plant consisting of two 108 G.P.M. Oilgear pumps, driven by a 200 H.P. double ended motor and one Oilgear Duplex Radial Piston Pump, driven by a 15 H.P. Motor.

The press has a double acting main vertical cylinder and an auxiliary horizontal cylinder. The depth of gap from the centerline of vertical cylinder to housing is 48". The maximum daylight opening between moving platen and base is 61".

The control cabinet conveniently located on the side of the press contains all the mechanism for adjustments of pressure and stroke.

The moving platen of vertical ram is substantially guided by four guide rods which are secured rigidly to the moving platen and slide through housing husks which are bronzed bushed and equipped grease fittings for lubrication.

The approximate total weight of the press on the foundation exclusive of dies and fixtures is 250,000 lbs.

Other machinery from this period still in use in Building 460 include plate shears, planer saws, press breaks, Southwark plate rollers and a hydraulic punch press and bending press.

SOURCES OF INFORMATION

Interviews

Foxall, Horace. Historian, U. S. Army Corps of Engineers, Seattle District, Seattle, Washington, October-November 1993.

Gallacci, Caroline. Historian, Historic Overview for the 1985 Historic Survey of Puget Sound Naval Shipyard, and 1986 National Register of Historic Places Nomination Forms for Puget Sound Naval Shipyard, Tacoma, Washington, November 1993.

Grulich, August Gene. Architect, Grulich Architecture and Planning Services, 1985 Historic Survey of Puget Sound Naval Shipyard, and 1986 National Register of Historic Places Nomination Forms for Puget Sound Naval Shipyard, Tacoma, Washington, November 1993.

Huntley, David. Shop employee in 460 Building, Puget Sound Naval Shipyard, Bremerton, November 1993.

Khadem, Kira. Historic Preservation Officer, Puget Sound Naval Shipyard, Bremerton, Washington, October-November 1993.

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Grulich Architecture and Planning Services. Historic Survey of Puget Sound Naval Shipyard, Bremerton, Washington. (Historic Overview and Puget Sound Naval Shipyard Historic Inventory Form Facility No. 460.) Tacoma, Washington, 1985.

Grulich, August Gene and Caroline Gallacci, Grulich Architecture and Planning Services. National Register of Historic Places Nomination Forms -- Puget Sound Naval Shipyard, Bremerton, Washington. Tacoma, Washington, 1986.

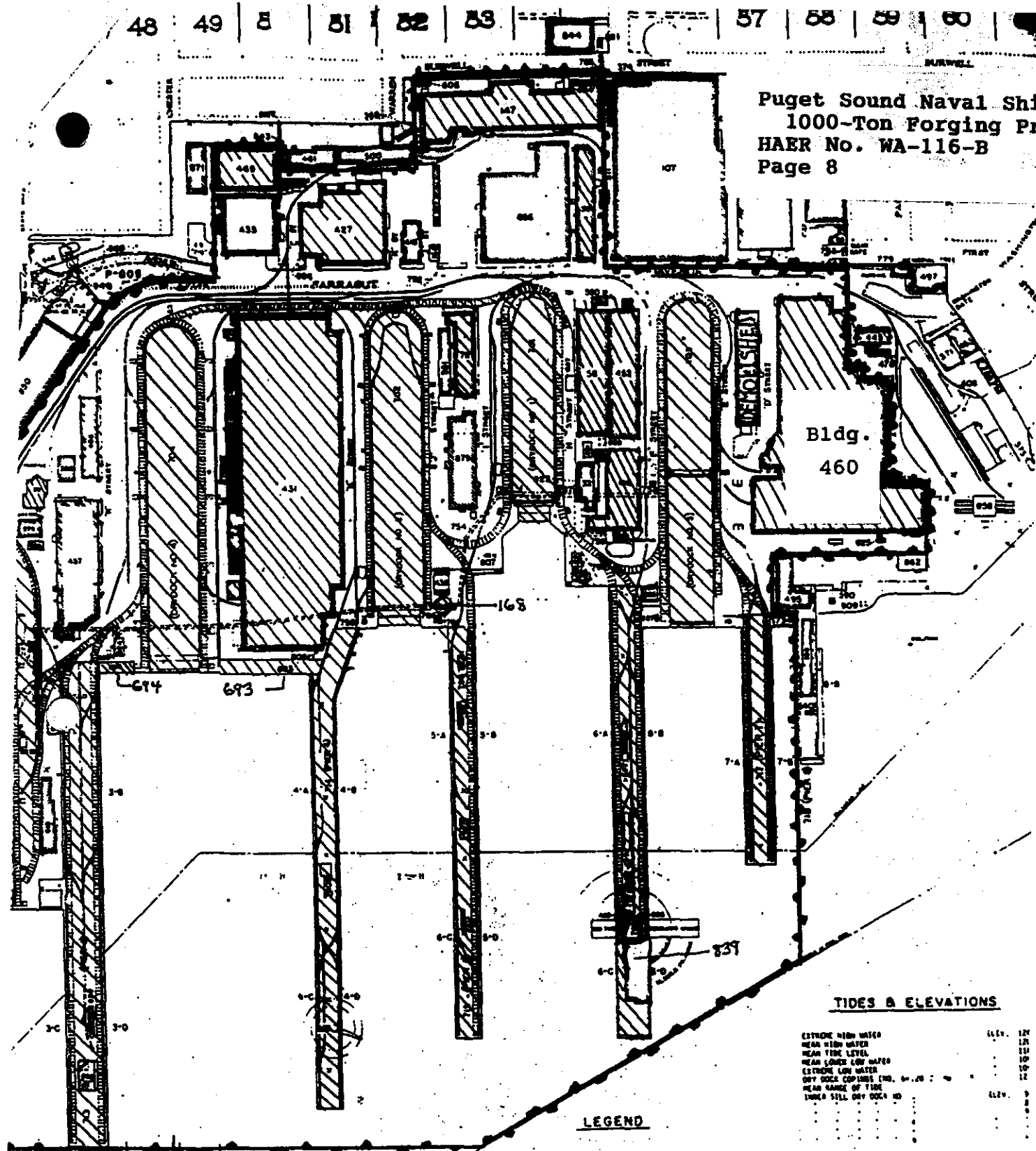
Operating Instructions For 1000 Ton Gap Type Forging Press S. O. 31864.

Reh, Louise M. Fifty Dollars An Acre, A History of the Puget Sound Naval Shipyard, 1891 to 1916. Bremerton: Red Deer Press, 1983.

Fair Winds of Change, A History of Puget Sound Naval Shipyard, 1916 to 1941. Bremerton: Red Deer Press, 1984

Reh, Louise M. and Helen Lou Ross. Nipsic to Nimitz -- A Centennial History of Puget Sound Naval Shipyard. Bremerton Printing Company, 1991.

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Section of:
Puget Sound Naval Shipyard
Yard Map -- June 1984
Scale-1"= 400'

STRUC. LOC.	DEPT.	FILE	STRUCTURE TITLE
***013	0 26		PIPE TRESTLE
***010	0 26		STACK
***015	0 26		PIPE STORAGE BLOC
***016	0 26		UNIT SUBSTATION NO. 1004
***017	0 26		COAL UNLOADING BLOC
***018	0 26		COAL CRUSHER BLOC
***019	0 26		FLY ASH STORAGE SILO
***020	0 26		OIL HANDLING BLOC
***021	0 26		PIPE PROTECTION W/ALVE BLOC
***022	0 26		COAL STORAGE BLOC
***023	0 26		EAST AIR COMPRESSOR BLOC
***024	0 26		RESERVED FOR P-500

LEGEND
SHIPYARD FENCE
PAVED SURFACE
EXISTING STRUCTURE
SUBSURFACE STRUCTURE
UNDER CONSTRUCTION
CRANE TRACK
RAILROAD TRACK
FIRE HYDRANT
FIRE ALARM
FLOOD LIGHT
CAPSTAN
DOLPHIN

TIDES & ELEVATIONS

EXTREME HIGH WATER	ELEV. 12'
MEAN HIGH WATER	11'
MEAN TIDE LEVEL	10'
MEAN LOW WATER	9'
EXTREME LOW WATER	8'
DRY DOCK COPIES (NO. 1-10)	12'
MEAN RANGE OF TIDE	4'
TUNED SILL DRY DOCK NO.	ELEV. 9'

LAND SUMMARY

HARD LAND	NO. AC.
PUGET SOUND NAVAL SHIPYARD	100.00
SHIPYARD	100.00
RAILROAD (OFF-STATE)	100.00
NAVAL SUPPLY CENTER	100.00
TOTAL HARD LAND	400.00

SUBMERGED LAND	NO. AC.
PUGET SOUND NAVAL SHIPYARD	100.00
SHIPYARD	100.00
NAVAL SUPPLY CENTER	100.00
RAILROAD (OFF-STATE)	100.00
TOTAL SUBMERGED LAND	400.00

SAND TOTAL ALL 400.00

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